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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,287	09/29/2006	Wei-Ping Chen	SOLV1.001APC	4155

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EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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09/14/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/586,287	Applicant(s) CHEN ET AL.	
	Examiner RIP A. LEE	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 24, 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 44-63 is/are rejected.
- 7) ☒ Claim(s) 44, 55, 59 and 60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 24, 2010 has been entered. Claims 44-63 are pending.

Claim Objections

2. Claim 44 is objected to because of the following informalities: On page 3, line 21 (section defining R⁸), please replace “straight-chain alky” with “straight-chain alkyl”.

3. Claim 44 is objected to because of the following informalities: On page 4, line 14, please replace “R⁸, R⁹, R¹⁰ and R¹⁰” with “R⁸, R⁹ and R¹⁰”.

4. Claim 44 is objected to because of the following informalities: On page 5, line 6, (section defining R⁵), replace “and” which appears between the two structures with “or”.

5. Claim 44 is objected to because of the following informalities: Page 5, line 18, recites “R⁸ is, independently, as previously defined.” Claim, as amended, presents two embodiments for substituent R⁸ (page 3, line 21 and page 4, line 14), and it is not clear which embodiment applies to substituents R⁸ in the bridging group G.

6. Claim 44 is objected to because of the following informalities: On page 5, line 18, after the phrase “R⁸ is, independently, as previously defined”, there needs to be a similar phrase defining substituents R¹³ and R¹⁴ since they appear in structures of page 5, line 6.

7. Claim 44 is objected to because of the following informalities: On page 5, line 20, (section defining R^{*} and R), insert “and” between the two structures.

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8. Claim 55 is objected to because of the following informalities: Substituent R^4 in the structure of Formula (X') should contain subscript m instead of n ; also, definition of m is needed in the claim. Appropriate correction is required.

9. Claim 59 is objected to because of the following informalities: Substituent R^4 in the structure of Formula (X) should contain subscript m instead of n . Appropriate correction is required.

10. Claim 60 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 60 is drawn to a method of making metallocene-based ligand of Formula (I) or Formula (III). Claim 60 ultimately depends from claim 55, which defines the method as applies to Formula (I) or Formula (III). Therefore, claim 60 does not further limit the subject of claim 55.

Appropriate corrections are required.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 44-47, 49, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Spindler *et al.* (U.S. 5,466,844).

Spindler *et al.* teaches ferrocene diphosphine compounds of general formula (I). Notably, in substituent $PR_{10}R_{11}$, groups R_{10} and R_{11} are different and are C_1 - C_{12} alkyl, C_1 - C_{12} cycloalkyl, C_1 - C_4 alkyl- or C_1 - C_4 alkoxy-substituted C_5 - C_{12} cycloalkyl, phenyl, or phenyl which is substituted by 1 to 3 identical or different members selected from the group consisting of C_1 - C_{12} alkyl, C_1 - C_{12} alkoxy, $-SiR_4R_5R_6$, halogen, $-SO_3M$, $-CO_2M$, $-PO_3M_2$, $-NR_7R_8$ or $-[NR_7R_8R_9]X$, wherein said compounds are in the form of racemates, diastereomers, or a mixture of diastereomers (claim 1). In one particular embodiment, R_{10} is phenyl, and R_{11} is cyclohexyl, 2-/4-methylphenyl, 2-/4-methoxyphenyl, 4-(dimethylamino)phenyl, 3,5-dimethyl-4-(dimethylamino)phenyl, 3,5-dimethyl-4-methoxyphenyl, or 4-*t*-butylphenyl (claim 16). The synthetic precursor to the diphosphine compound is compound VII.

Diphosphine (I) also contains the substituent $C^*HR^1-PR_2R_3$, in which C^* is a chiral carbon. Group R^1 is a branched alkyl (isopropyl, isobutyl, *t*-butyl), phenyl, or substituted phenyl (col. 1, lines 37-40, col. 2, lines 16-27). Inventive diphosphines are prepared from the corresponding precursor (VII), which contains substituent $C^*HR^1-NMe_2$. Preparation of diphosphine (I) entails preparation of compounds (VII) in which R^1 is also branched alkyl (isopropyl, isobutyl, *t*-butyl), phenyl, or substituted phenyl. Compounds (VII) meet the structural features set forth in instant claims.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 44-63 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 38-44 of copending Application No. 10/586,204. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to substantially the same process of preparing metallocene based chiral ligand. Notably, copending claims recite substantially the same steps of ortho-lithiation in presence of a chiral/achiral or directing group (designated X*), and introducing substituent PR¹R² by subsequent reaction with R¹-substituted phosphine followed by alkylation with R²-bearing Grignard reagent or organolithium. Chiral and achiral directing groups of copending claim 39 are identical to those recited in instant claim 56.

Claims of the copending application do not recite structures of the metallocene. Relevant section of the specification of copending application appears on page 22 of the disclosure, *inter alia*. One of skill in the art finds that the metallocene based chiral ligands prepared by the inventive process have the same structure as that recited in instant claims. Thus, the claims of

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the copending application are drawn to an obvious variant of the invention of the instant claims. Applicant's attention is drawn to MPEP § 804 where it is disclosed that "the specification can always be used as a dictionary to learn the meaning of a term in a patent claim." *In re Boylan*, 392 F. 2d 1017, 157 USPQ 370 (CCPA 1986). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. *In re Vogel*, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

15. The rejection of claims 44-54 under 35 U.S.C. 102(b) as being anticipated by Spindler *et al.* (U.S. 5,466,844), set forth in paragraph 7 of the final office action dated December 22, 2009, has been overcome by amendment. New grounds of rejection based on newly amended claims have been set forth in paragraph 12, *supra*.

The provisional, nonstatutory obviousness-type double patenting rejection of claims over claims of copending Application No. 10/586,204, as applied to newly amended claims, has been set forth in paragraph 14, *supra*. To date, Applicant has not filed appropriate terminal disclaimer to overcome the rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rip A. Lee/
Examiner, Art Unit 1796

September 1, 2010